

**BY ORDER OF THE COMMANDER,  
436TH AIRLIFT WING**



**DOVER AIR FORCE BASE  
INSTRUCTION 21-202**

**20 AUGUST 2003**

**Maintenance**

**FUNCTIONAL CHECK FLIGHT (FCF)/  
OPERATIONAL CHECK FLIGHT (OCF)**

**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

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This instruction standardizes procedures for managing effective Functional Check Flight (FCF) and Operational Check Flight (OCF) programs. The 436 MXG/CC and 436 OG/CC have joint responsibility for the effective management of these programs. The success of these programs begins with the cooperation between the Operations and Maintenance communities. Quality Assurance and the Operations Group Standardization Evaluation (OGV) will work together in the development of these programs. In the event of an FCF/OCF requirement, the FCF/OCF Procedural Checklist ([Attachment 2](#)) will be utilized for coordination of all agencies involved.

**SUMMARY OF REVISIONS**

**This document is substantially revised and must be completely reviewed.**

This publication has been updated with additional guidance in [Attachment 2](#) (FCF/OCF Procedural Checklist), and several points of contact changes.

**1. Functional Check Flights (FCF):**

1.1. FCFs are determined by the requirements outlined in T.O. 1-1-300, *Acceptance/Functional Check Flights and Maintenance Operational Checks*, T.O. 1C-5A-6 *Aircraft Scheduled Inspection and Maintenance Requirements*, or as directed by the Maintenance Group (MXG) Commander.

1.2. The OG/CC (or equivalent) will select a qualified, thoroughly experienced individual to serve as FCF/OCF OIC. This OIC serves as the focal point for FCF/OCF matters in the operations community and is the liaison QA works with to schedule FCFs and OCFs.

1.3. DAFB crews are not currently qualified nor authorized to perform FCFs. AFI 11-2C-5V3, *C-5 Operations Procedures*, Chapter 10 outlines the procedures to follow in the event an FCF is required.

1.4. Quality Assurance (QA) and the Production Flight Superintendent are the focal points concerning the maintenance conditions requiring the FCF. QA will ensure the aircraft 781-series forms and the aircraft primary weight and balance (W&B) forms are available for review and discussion.

1.5. QA will maintain the automated product, Functional Check Flight Log, to provide FCF historical information and analysis.

1.6. Only FCF crews will perform high-speed taxi checks. DAFB crews are not qualified nor authorized to perform high-speed taxi checks.

## **2. Operational Check Flights (OCF):**

2.1. OCFs are determined by the requirements outlined in the 1C-5A-6, 1C-5A-1, and 1C-5A-2-1 thru 1C-5A-2-15 series tech data, or when test equipment doesn't exist to perform the check on the ground. All OCFs will be approved and/or directed by the MXG Commander. Under normal circumstances, the MXG point of contact will provide a 24-hour notification to 436 OSS/OSO to ensure aircrew availability.

2.2. Coordination between the following agencies is vital to this program:

2.2.1. Quality Assurance (QA): QA will be the point of contact between maintenance and operations. They will schedule timely briefings to discuss the flight profile and operational checks required.

2.2.2. Operations Group Standardization/Evaluation (OGV): OGV will coordinate with the flying squadrons to provide the most qualified pilots, engineers, and all other necessary crew members to accomplish the required checks. As a minimum, the crew should include a highly experienced instructor or evaluator pilot, an instructor engineer, and a first engineer.

2.2.3. Aircraft Maintenance Squadron (AMXS): AMXS will evaluate all aircraft and recommend whether or not an OCF is required before returning the aircraft to regular service. AMXS will provide information on all maintenance/repair actions and provide specialist representatives to discuss any affected systems. If an in-flight operational check of the ram air turbine (RAT) is due, Alpha 2/Bravo 2 will coordinate with Plans and Scheduling to locally restrict the aircraft so the check can be accomplished.

2.2.4. Plans, Scheduling, and Documentation (PS&D): PS&D will coordinate and schedule all required OCFs. OCF missions will be conducted outside the training fence. If an in-flight RAT check is required P&S will coordinate with maintenance and operations to schedule aircraft for a local and annotate "RAT check due" in the remarks block of the flying schedule.

2.2.5. Equipment Maintenance Squadron (EMS): EMS will provide information on all maintenance/repair actions and provide specialist representatives to discuss systems affected by their maintenance actions.

2.2.6. The MXG/CC upon recommendation of QA and the applicable squadron maintenance supervision will determine whether an OCF will be requested.

2.3. All CANN status aircraft will require an evaluation to determine whether a FCF or OCF is appropriate before returning the aircraft to regular service. Length of time in CANN and the extent to which aircraft systems were affected by part cannibalization are key factors when requesting a FCF or OCF. The CANN OI will augment this instruction.

**3. In-Flight Operational Check of The RAM Air Turbine (RAT):**

3.1. Any crew is capable of performing an in-flight RAT operational check (OCF/FCF crew is not required). After completion of the local checklist, if the system checked good, the flight crew will sign off the discrepancy in the aircraft forms and inform maintenance of any findings.

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**Attachment 1****GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

AFI 11-2C-5V3, *C-5 Operations Procedures*, Chapter 10

AFI 21-101, *Aerospace Equipment Maintenance Management*, Chapter 10

T.O. 1C-5A-6, *Aircraft Scheduled Inspection and Maintenance Requirements*

T.O. 1-1-300, *Acceptance/Functional Check Flights and Maintenance Operational Checks*

MXGOI 21-7, *Cannibalization*

***Abbreviations and Acronyms***

**AMXS**—Aircraft Maintenance Squadron

**CANN OI**—Cannibalization Operating Instruction

**EMS**—Equipment Maintenance Squadron

**FCF**—Functional Check Flight

**MXG**—Maintenance Group

**MXG/CC**—Maintenance Group Commander

**OCF**—Operational Check Flight

**OG/CC**—Operations Group Commander

**OGV**—Operations Group Aircrew Standardization/Evaluation

**POC**—Point of Contact

**PS&D**—Plans, Scheduling, and Documentation

**RAT**—Ram Air Turbine

**QA**—Quality Assurance

**W&B**—Weight and Balance

**Attachment 2****FCF/OCF PROCEDURAL CHECKLIST****A2.1. 436th/512th FCF/OCF Checklist:**

A2.1.1. This checklist will be used whenever a FCF/OCF or high-speed taxi check is required at Dover AFB DE. It is applicable to all maintenance and operations personnel. The first section lists duties and responsibilities for each office, the last section is a flow chart for sequence of events if an FCF/OCF is required.

A2.1.2. Whenever a maintenance condition exists that requires a FCF/OCF as per the 1C-5A-6, c-5 Special Inspections, Section III or if directed by the MXG/CC, the appropriate maintenance supervision will contact Quality Assurance. This checklist implements guidance of AFI 21-101, TO 1-1-300, 11-2C-5V3, Chapter 10, and DAFBI 21-202.

**A2.2. Maintenance Group Quality Assurance will:**

A2.2.1. Be the point of contact between maintenance and operations.

A2.2.2. Contact PS&D giving aircraft tail number and reason for FCF/OCF.

A2.2.3. Schedule a briefing for maintenance and operations personnel for the FCF/OCF to include any specialists with detailed hands-on history of the maintenance action requiring the FCF/OCF. This briefing will be attended by AMXS supervision, EMS supervision (if applicable), OG/DOV, Wing Safety (flight), the pilot and flight engineer who will be flying the FCF/OCF, and AFETS if requested.

A2.2.4. Ensure a complete maintenance history (781A/G081) is available for review or discussion as well as Weight & Balance records as necessary.

A2.2.5. Maintain notes from the FCF/OCF brief and names of personnel attending by recording pertinent information on the OCF Log or FCF Log in QA.

A2.2.6. Attend the FCF/OCF debrief with AMXS or EMS as applicable.

A2.2.7. Record all actions of release or non-release and the date documents are forwarded, (including FCF flight checklist used during flight) to PS&D for inclusion into the aircraft jacket file.

A2.2.8. Notify Life Support for Parachute requirement for FCF crew.

**A2.3. Aircraft Maintenance Squadron/Equipment Maintenance Squadron will:**

A2.3.1. Notify QA as soon as it is determined a FCF/OCF is required.

A2.3.2. Configure the aircraft for the FCF/OCF according to technical data, ensuring all maintenance actions are documented properly IAW -6 and 00-20 series TOs to include maintenance operational checks.

A2.3.3. Attend the FCF/OCF pre-brief to brief maintenance history, corrective actions and processes that were used to troubleshoot the malfunction.

A2.3.4. Keep QA/PS&D/MOC informed as to the status of the aircraft after the briefing until crew show at the aircraft.

**A2.4. MX Plans Scheduling & Documentation will:**

- A2.4.1. Contact AMC/LGMQAA with FCF/OCF requirement, or DOV Current OPS for OCF flight.
- A2.4.2. Schedule flight with a 24-hour window for crew availability. If the 339th Test Flight crew from Robins AFB is required, their arrival will be coordinated with AMC/DOGV for scheduling flight.
- A2.4.3. Coordinate the fund cite with 436 MOS/MXOPR for 339th test squadron's TDY.
- A2.4.4. MX Group will fund the TDY cost for the FCF crew from 339th if necessary.

**A2.5. Operation Group (Current Ops/OGV) will:**

- A2.5.1. Notify OG/OGV with the requirement.
- A2.5.2. Will select the most qualified crew to fly OCF flights.
- A2.5.3. OGV will coordinate with the 339th crew for lodging and transportation needs.
- A2.5.4. Be responsible for any sensitive FCF procedures acquired from the 339th until turned in at debrief to QA, to be filed in PS&D with the aircraft jacket file, or destroyed after FCF flight debrief IAW 1-1-300.

**A2.6. Sequence of Events:**

- A2.6.1. Aircraft has met the requirements of 1C-5A-6, Section I, Part C, or TCTO FCF/OCF requirement or determined to fly OCF as per MXG/CC.
- A2.6.2. AMXS/EMS notifies QA.
- A2.6.3. QA notifies PS&D.
- A2.6.4. PS&D notifies AMC/LGMQAA if an FCF crew is required from the 339th Test Flight Squadron. If OCF notify DOV Current OPS.
- A2.6.5. QA will notify Stan/Eval (OGV) for requirement with anticipated take-off time if applicable.
- A2.6.6. QA will schedule briefing the day prior to anticipated take-off with OGV, AMXS/EMS, PS&D, the pilot and flight engineer, and Flight Safety from the wing safety office. This briefing will normally be held in the MXG complex. AFETS maybe asked to attend this briefing when necessary. QA will keep attendance sign-in sheet for the FCF/OCF log. This briefing will be conducted with the availability of FCF crew from the 339th when arriving on station.
- A2.6.7. The briefing will be chaired by QA. All historical data relating to the event, which now requires the FCF/OCF, should be available at this briefing such as engine histories (8050 and AFTO 95) and G081 with actual 781A forms if necessary. This briefing will provide all parties involved with the requirements of the FCF/OCF.
- A2.6.8. The status of the aircraft will now be strictly tracked by AMXS/EMS. QA and the MOC will be kept informed if the status changes. The MOC will keep current OPS informed of any status changes that will effect scheduled take-off time. If the status changes and the scheduled take-off will be delayed, the FCF/OCF flight will be re-cut 24-hours later based on maintenance ETIC's. There are no ground aborts in AMC, only maintenance cancellations.

A2.6.9. Once the Flight is complete, QA will attend the flight debrief. If the FCF/OCF was satisfactory, QA will forward the flight procedure checklist to PS&D for insertion into the aircraft file jacket. If the FCF/OCF was not satisfactory, it will be logged on the automated QA log, with reason for failure. QA will discuss with the aircrew at debrief as their availability for the next FCF/OCF flight. It is highly recommended the same crew fly the next flight for continuous operator stability. If the crew is not available, PS&D will be notified to re-accomplish checklist step number 4 and continue. A copy of Flight Authorization Form 41 will be filed by QA.